IN THE CLAIMS:

Please substitute the following claims for the pending claims with the same number:

1. (currently amended) An instance browser comprising:

a repository of class and relation definitions and instances of classes;

a server having access to said repository, for responding to queries relating to class and relation definitions and instances of classes in said repository; and

a graphical user interface communicating with said server [[including]] interactively displaying icons [[for]] representing instances of classes as a user browses said repository.

2. (original)   The instance browser of claim 1 wherein an icon is associated with an instance using a global identifier (GID).

3. (original)   The instance browser of claim 2 wherein the GID is a function in the repository.

4. (original)   The instance browser of claim 3 wherein the GID is a function of the largest class in the repository.

5. (original)   The instance browser of claim 1 wherein an icon is associated with an instance based on a view of the instance.

6. (original)   The instance browser of claim 1 wherein an image is associated with an icon by the class, an instance of which is represented by the icon.

7. (original)   The instance browser of claim 1 wherein an image is associated with an icon by a function from instances to images.

8. (original)   The instance browser of claim 7 wherein the function from instances to images is defined within the repository.

9. (original)   The instance browser of claim 7 wherein the function from instances to images is selected by a user from among a plurality of functions.

10. (original)   The instance browser of claim 1 wherein a menu associated with an icon lists functions having as domain the class, an instance of which is represented by the icon.

11. (original)   The instance browser of claim 10 further comprising a function search tool for searching for functions having as domain the class, an instance of which is represented by the icon.

12. (original)   The instance browser of claim 11 wherein said function search tool searches over a network.

13. (original)   The instance browser of claim 11 wherein said function search tool searches over a central repository.

14. (original)   The instance browser of claim 11 wherein said function search tool searches for functions having as domain the class, an instance of which is represented by the icon, when a user requests to see the menu associated with the icon.

15. (original)   The instance browser of claim 10 wherein icons are created for values of listed functions.

16. (original)   The instance browser of claim 1 wherein said graphical user interface displays collections of icons for collections of instances of classes.

17. (original)   The instance browser of claim 16 wherein a collection of instances is defined by a logical term.

18. (currently amended) The instance browser of claim 17 wherein the logical term is a single relation from the ontology with instances specified for all but one parameter, and the

collection is defined by those instances for the unspecified parameter that satisfy the relation in conjunction with the instances specified for the other parameters.

19 . (original)   The instance browser of claim 17 further comprising an instance search tool for searching for instances to display in the collection.

20. (original)   The instance browser of claim 19 wherein said instance search tool searches for instances over a network.

21. (original)   The instance browser of claim 19 wherein said instance search tool searches for instances over a central repository.

22. (original)   The instance browser of claim 19 wherein said instance search tool includes an inference engine.

23. (original)   The instance browser of claim 16 wherein said graphical user interface presents instances of a collection grouped by subclasses to which they belong.

24. (original)   The instance browser of claim 1 further comprising a filter, to filter at least one of classes, relations and instances based on authorship.

25. (currently amended) A method for instance browsing comprising:
        managing a repository of class and relation definitions, and instance documents [[for]] that describe instances of classes and [[for]] tuples of relations;
        responding to queries relating to class and relation definitions and instance of classes in the repository; and
        interactively displaying icons representing instances of classes as a user browses the repository, based on said responding.

26. (original)   The method of claim 25 further comprising associating an icon with an instance using a global identifier (GID).

27. (original)   The method of claim 26 wherein the GID is a function in the repository.

28. (original)   The method of claim 27 wherein the GID is a function of the largest class in the repository.

29. (original)   The method of claim 25 further comprising associating an icon with an instance based on a view of the instance.

30. (original)   The method of claim 25 further comprising associating an image with an icon by the class, an instance of which is represented by the icon.

31. (original)   The method of claim 25 further comprising associating an image with an icon by a function from instances to images.

32. (original)   The method of claim 31 wherein the function from instances to images is defined within the repository.

33. (original)   The method of claim 31 wherein the function from instances to images is selected by a user from among a plurality of functions.

34. (original)   The method of claim 25 further comprising associating a menu with an icon, the menu listing functions having as domain the class, an instance of which is represented by the icon.

35. (original)   The method of claim 34 further comprising searching for functions having as domain the class, an instance of which is represented by the icon.

36. (original)   The method of claim 35 wherein said searching searches over a network.

37. (original)   The method of claim 35 wherein said searching searches over a central repository.

38. (original)   The method of claim 35 wherein said searching searches for functions having as domain the class, an instance of which is represented by the icon, when a user requests to see the menu associated with the icon.

39. (original)   The method of claim 34 further comprising creating icons for values of listed functions.

40. (currently amended) The method of claim 25 wherein said interactively displaying icons comprises:
        searching for instance documents including a description of a given instance and a reference to an icon associated therewith;
        searching for instance documents including a description of the given instance and a caption associated therewith;
        displaying the icon and the caption associated with the given instance.

41. (currently amended) The method of claim 40 wherein said interactively displaying icons further comprises attaching a pop-up menu to the displayed icon, comprising:
        searching for the class, an instance of which is represented by the icon; and
        for functions whose domain is the class, adding a corresponding item to the pop-up menu.

42. (original)   The method of claim 41 further comprising grouping functions whose domain is the class into a sub-menu within the pop-up menu.

43. (currently amended) The method of claim 41 wherein said interactively displaying icons further comprises, for functions whose domain is the class:
        searching for instance documents [[including]] describing the function; and
        creating an icon for the instance described in the instance document.

44. (original)   The method of claim 43 wherein said searching for instance documents steps comprise filtering instance documents based on authorship.

45. (currently amended) The method of claim 25 wherein said <u>interactively</u> displaying icons comprises:

   providing a definition of a collection, including a name of a relation and <u>specifying</u> an instance for all but one [[missing]] class [[in]] <u>from</u> the domain of the relation;

   searching for instance documents [[including]] <u>describing</u> the relation;

   for each instance document [[including]] <u>describing</u> the relation, searching for tuples where the instance [[of]] <u>described in</u> the instance document is the element in the [[missing]] <u>unspecified</u> class from the domain of the relation <u>in conjunction with the instances provided for the other classes of the domain</u>;

   for each instance document including at least one such tuple, creating an icon for the instance [[of]] <u>described in</u> the instance document.

46. (original)   The method of claim 45 wherein said searching for instance documents comprises filtering instance documents based on authorship.

47. (original)   The method of claim 46 wherein said searching searches over a network.

48. (original)   The method of claim 46 wherein said searching searches over a central repository.

49. (original)   The method of claim 46 wherein said searching uses an inference engine.

50. (original)   The method of claim 45 further comprising deriving a caption for the collection.

51. (currently amended) A distributed ontology system comprising:

   a central computer comprising a global ontology directory;

   a plurality of ontology server computers, each comprising:

      a repository of class and relation definitions <u>and instances of classes</u>; and

      a [[server]] <u>repository manager</u> for responding to queries relating to class and relation definitions <u>and instances of classes</u> in said repository;

a computer network connecting said central computer with said plurality of ontology server computers; and

a graphical user interface communicating with said computer network [[including]] interactively displaying icons [[for]] representing instances of classes as a user browses said plurality of repositories.

52. (original)   The system of claim 51 wherein an icon is associated with an instance using a global identifier (GID).

53. (original)   The system of claim 52 wherein the GID is a function in the global ontology directory.

54. (original)   The system of claim 53 wherein the GID is a function of the largest class in the global ontology directory.

55. (original)   The system of claim 51 wherein an icon is associated with an instance based on a view of the instance.

56. (original)   The system of claim 51 wherein an image is associated with an icon by the class, an instance of which is represented by the icon.

57. (original)   The system of claim 51 wherein an image is associated with an icon by a function from instances to images.

58. (original)   The system of claim 57 wherein the function from instances to images is defined within the global ontology directory.

59. (original)   The system of claim 57 wherein the function from instances to images is selected by a user from among a plurality of functions.

60. (original)   The system of claim 51 wherein a menu associated with an icon lists functions having as domain the class, an instance of which is represented by the icon.

61. (original) The system of claim 60 further comprising a function search tool for searching for the functions having as domain the class, an instance of which is represented by the icon.

62. (original) The system of claim 61 wherein said function search tool searches over a network.

63. (original) The system of claim 61 wherein said function search tool searches over a central repository.

64. (original) The system of claim 61 wherein said function search tool searches for functions having as domain the class, an instance of which is represented by the icon, when a user requests to see the menu associated with the icon.

65. (original) The system of claim 60 wherein icons are created for values of the listed functions.

66. (original) The system of claim 51 wherein said graphical user interface displays collections of icons for collections of instances of classes.

67. (original) The system of claim 66 wherein a collection of instances is defined by a logical term.

68. (currently amended) The system of claim 67 wherein the logical term is a single relation from the ontology with instances specified for all but one parameter, and the collection is defined by those instances for the unspecified parameter that satisfy the relation in conjunction with the instances specified for the other parameters.

69 . (original) The system of claim 67 further comprising an instance search tool for searching for instances to display in the collection.

70. (original)   The system of claim 69 wherein said instance search tool searches for instances over a network.

71. (original)   The system of claim 69 wherein said instance search tool searches for instances over a central repository.

72. (original)   The system of claim 69 wherein said instance search tool includes an inference engine.

73. (original)   The system of claim 66 wherein said graphical user interface presents instances of a collection grouped by subclasses to which they belong.

74. (original)   The system of claim 51 further comprising a filter, to filter at least one of classes, relations and instance documents based on authorship.

75. (currently amended) A distributed ontology method comprising:

managing a plurality of repositories of class and relation definitions and instance documents that describe instances of classes and tuples of relations;

managing a global ontology directory for the plurality of repositories;

responding to queries relating to class and relation definitions and instances of classes in at least one repository by consulting the global ontology directory; and

interactively displaying icons representing instances of classes as a user browses the repository, based on said responding.

76. (original)   The method of claim 75 further comprising associating an icon with an instance using a global identifier (GID).

77. (original)   The method of claim 76 wherein the GID is a function in the global ontology directory.

78. (original)   The method of claim 76 wherein the GID is a function of the largest class in the global ontology directory.

79. (original)   The method of claim 75 further comprising associating an icon with an instance based on a view of the instance.

80. (original)   The method of claim 75 further comprising associating an image with an icon by the class, an instance of which is represented by the icon.

81. (original)   The method of claim 75 further comprising associating an image with an icon by a function from instances to images.

82. (original)   The method of claim 81 wherein the function from instances to images is defined within the global ontology directory.

83. (original)   The method of claim 75 wherein the function from instances to images is selected by a user from among a plurality of functions.

84. (original)   The method of claim 75 wherein a menu associated with an icon lists functions having as domain the class, an instance of which is represented by the icon.

85. (original)   The method of claim 84 further comprising searching for functions having as domain the class, an instance of which is represented by the icon.

86. (original)   The method of claim 85 wherein said searching searches over a network.

87. (original)   The method of claim 85 wherein said searching searches over a central repository.

88. (original) The method of claim 85 wherein said searching searches for the functions having as domain the class, an instance of which is represented by the icon, when a user requests to see the menu associated with the icon.

89. (original) The method of claim 84 further comprising creating icons for values of listed functions.

90. (currently amended) The method of claim 75 wherein said interactively displaying icons comprises:
        searching for instance documents including a description of a given instance and a reference to an icon associated therewith;
        searching for instance documents including a description of the given instance and a caption associated therewith;
        displaying the icon and the caption associated with the given instance.

91. (currently amended) The method of claim 90 wherein said interactively displaying icons further comprises attaching a pop-up menu to the displayed icon, comprising:
        searching for the class, an instance of which is represented by the icon; and
        for functions whose domain is the class, adding a corresponding item to the pop-up menu.

92. (original) The method of claim 91 further comprising grouping functions whose domain is the class into a sub-menu within the pop-up menu.

93. (currently amended) The method of claim 91 wherein said interactively displaying icons further comprises, for each function having as domain the class, an instance of which is represented by the icon:
        searching for instance documents [[including]] describing the function; and
        creating an icon for the instance described in the instance document.

94. (original) The method of claim 93 wherein said searching for instance documents steps comprise filtering instance documents based on authorship.

95. (currently amended) The method of claim 75 wherein said <u>interactively</u> displaying icons comprises:

    providing a definition of a collection, including a name of a relation and <u>specifying</u> an instance for all but one [[missing]] class [[in]] <u>from</u> the domain of the relation;

    searching for instance documents [[including]] <u>describing</u> the relation;

    for each instance document [[including]] <u>describing</u> the relation, searching for tuples where the instance [[of]] <u>described in</u> the instance document is the element in the [[missing]] <u>unspecified</u> class from the domain of the relation <u>in conjunction with the instances specified for the other classes of the domain</u>;

    for each instance document including at least one such tuple, creating an icon for the instance [[of]] <u>described in</u> the instance document.

96. (original) The method of claim 95 wherein said searching for instance documents comprises filtering instance documents based on authorship.

97. (original) The method of claim 96 wherein said searching searches over a network.

98. (original) The method of claim 96 wherein said searching searches over a central repository.

99. (original) The method of claim 96 wherein said searching uses an inference engine.

100. (original) The method of claim 95 further comprising deriving a caption for the collection.